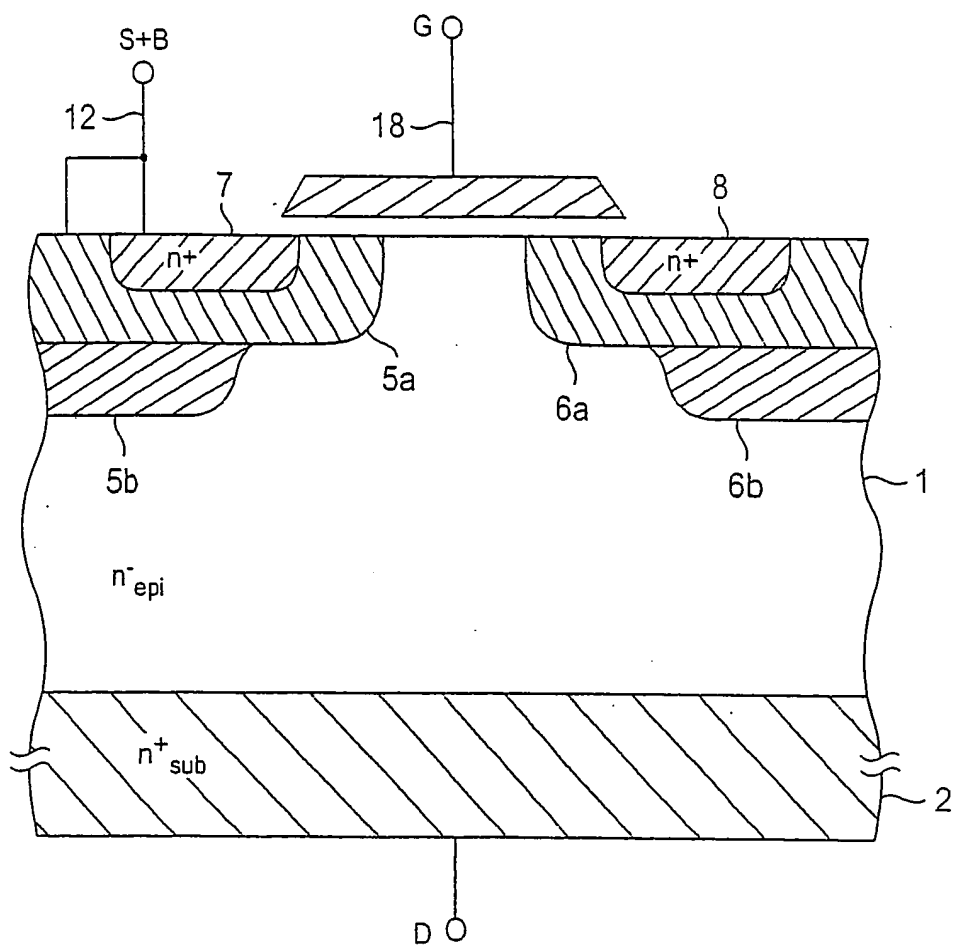




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CONVENTIONAL MOSFET

FIG. 1  
(PRIOR ART)

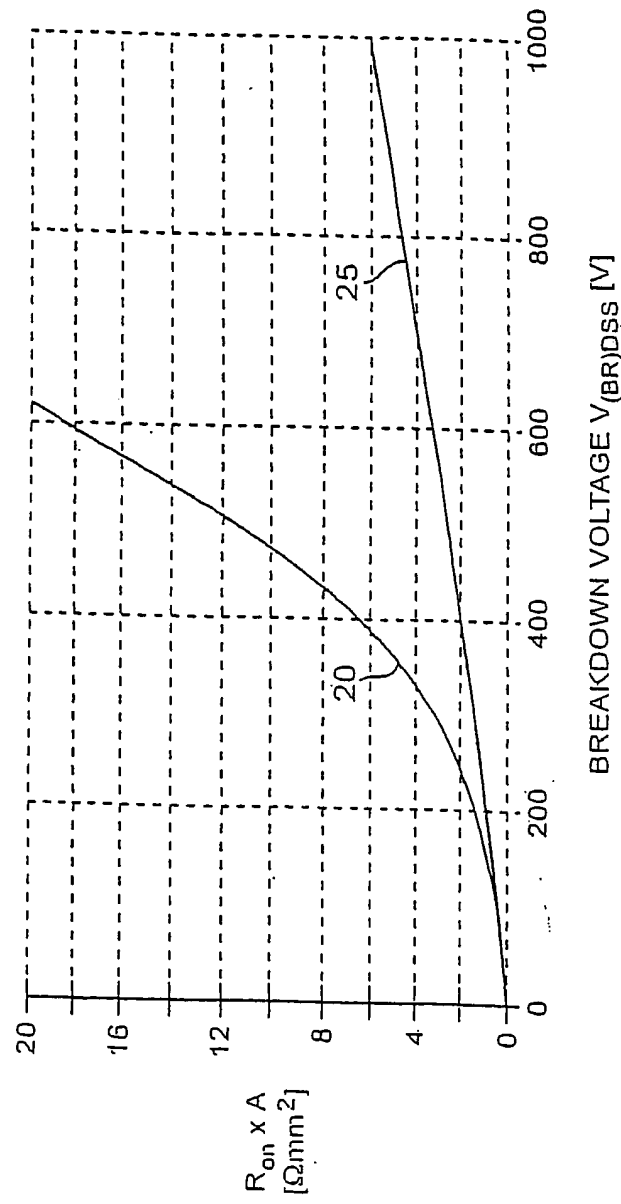
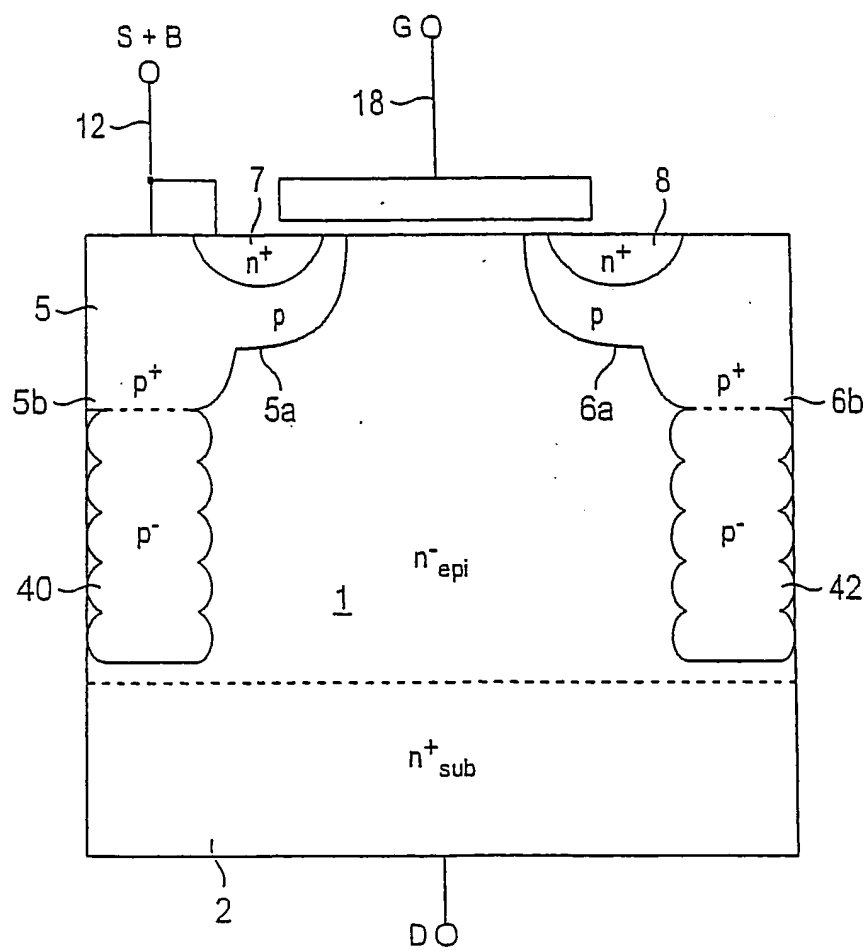


FIG. 2



THE DOPANT DISTRIBUTION OF A HIGH VOLTAGE VERTICAL DMOS TRANSISTOR WITH A RELATIVELY LOW ON-RESISTANCE

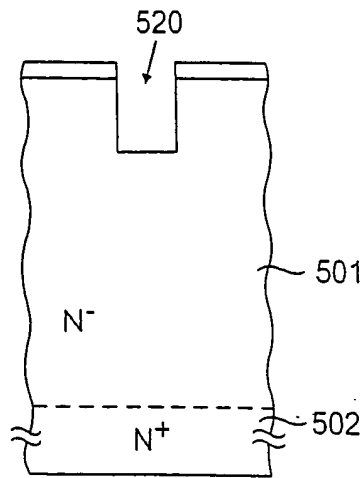
FIG. 3

(PRIOR ART)

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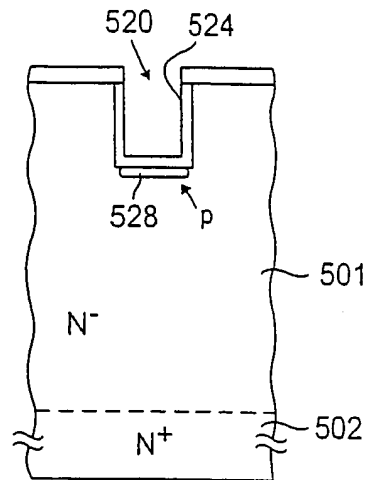
1. EPITAXIAL DEPOSITION
2. FORMATION OF THE TRENCH  
ETCH STOP LAYER
3. MASK AND ETCH THE TRENCH  
ETCH STOP LAYER
4. TRENCH ETCH

FIG. 4(a)



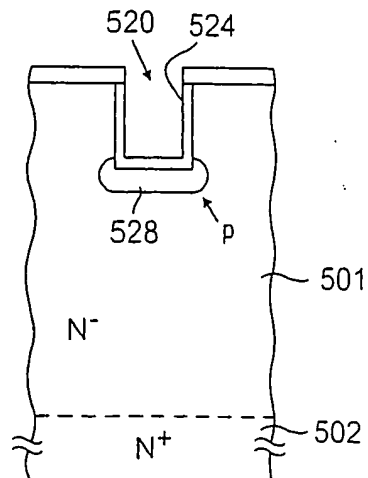
5. GROW THIN OXIDE LAYER  
IN THE TRENCH
6. IMPLANT THE DOPANT

FIG. 4(b)

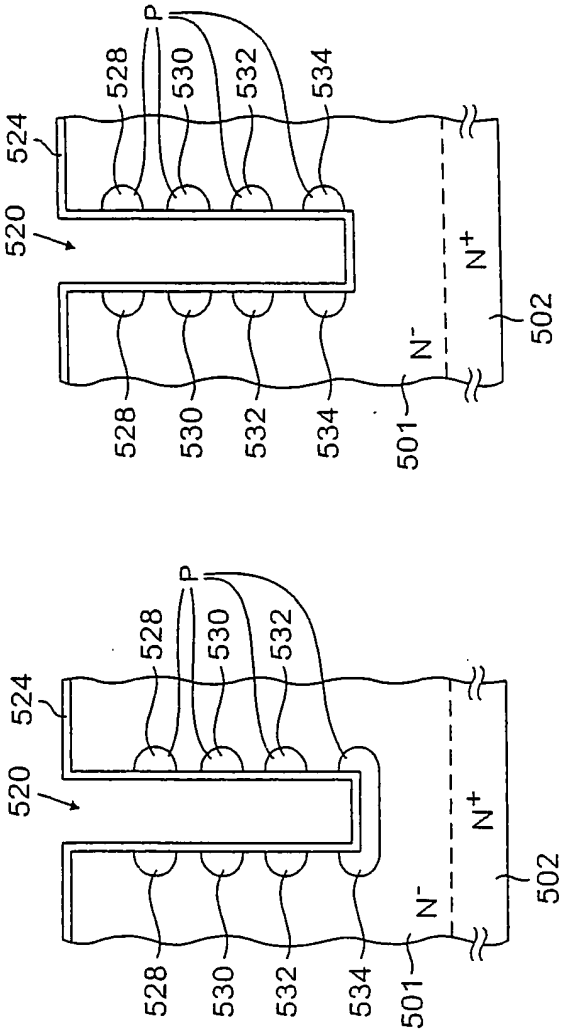


7. PERFORM A HIGH  
TEMPERATURE DIFFUSION
8. ETCH THE OXIDE AT THE  
BOTTOM OF THE TRENCH

FIG. 4(c)

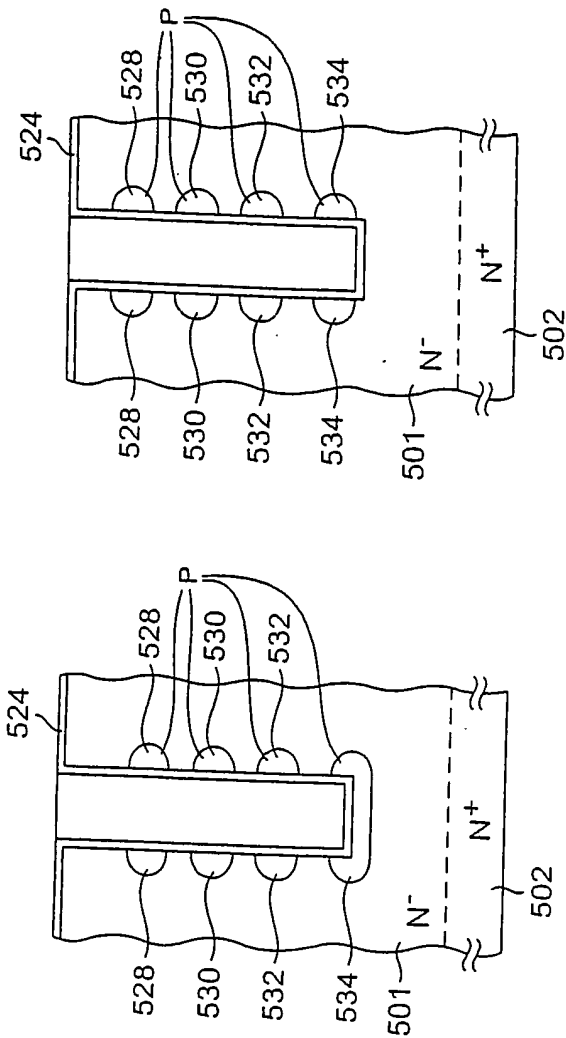


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9. REPEAT THE DOPING AND ETCH STEPS AS MANY TIMES AS REQUIRED
10. DOP THE REGION FURTHEST FROM THE SURFACE

FIG. 4(d)



- 11. FILL THE TRENCH
- 12. PLANARIZE THE WAFER SURFACE

FIG. 4(e)



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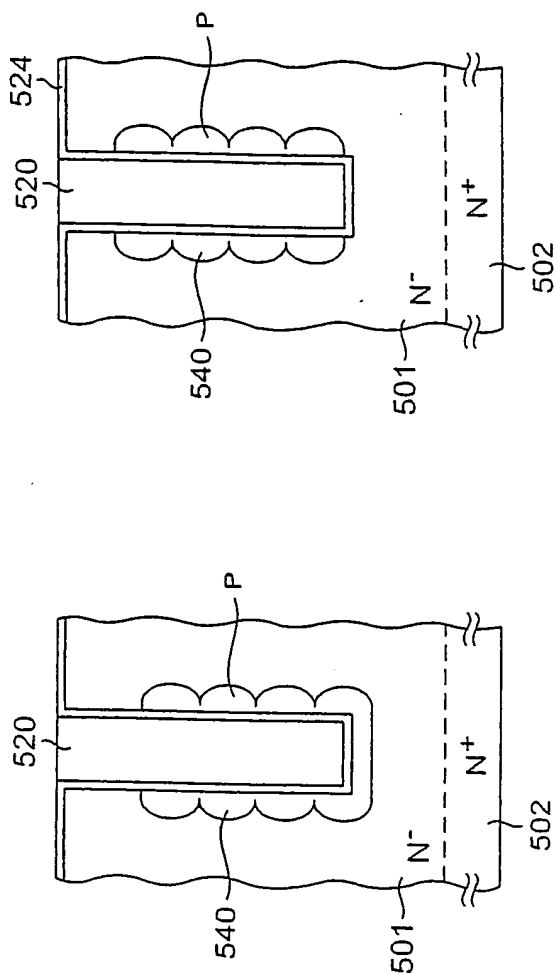


FIG. 4(f)

13. PERFORM A HIGH  
TEMPERATURE  
DIFFUSION STEP